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Guide to Agricultural Resources and Demographic Characteristics of the Former Union of Soviet Socialist Republics By Oblast

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CENTER FOR TRANSPORTATION STUDIES

Research

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With its enormous size and great diversity, the former Union of Soviet Socialist Republics (FUSSR) is an important player in the world grain and oilseed markets. The lack of data about FUSSR, though, poses some obstacles in understanding the impact on world trade. In this study, researchers gathered unique statistics about FUSSR's crop areas and output. In addition, they developed a methodology to estimate the surplus or deficit of the feed quantity produced for the livestock population by FUSSR's administrative units, or oblasts.

The research looked at estimating the size of the FUSSR's demand for imported feedstuffs and its probable sources and transportation routes. It also forecasted what a reformed FUSSR agriculture would look like after changing cropping patterns and applying technology. The report organizes the findings by oblast and republic and details the following information for each oblast: area in square miles; the km of railroad; the km for two types of highways; a distance matrix between the major population centers by road; population statistics; estimated animal feed protein surplus/deficiency; calorie surplus/deficiency, and soybean equivalent to meet the protein requirements; area sown for winter wheat, spring wheat, rye, corn for grain, barley, oats, potatoes, flax, sugar beets, and sunflower; and output for winter wheat, spring wheat, rye, corn for grain, barley, oats, eggs, poultry, mutton and goat, pork, beef and veal.

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EXECUTIVE SUMMARY

The former Soviet Union (FUSSR) was a major contributor to uncertainty and instability in the world grain and oilseed markets. Probable outcomes of the current political turmoil in the FUSSR will eventually be agricultural reforms leading to acreage shifts among wheat, feed grains and oilseeds, and improved livestock feeding and management practices. The results will be a more rational internal trade flow, the development of adequate storage and handling facilities, and more responsiveness to the world supply and demand situation in wheat, feed grains and oilseeds. There are important implications for agricultural producers, exporters and related service firms and for the shipping and logistic infrastructure of Minnesota and the upper Midwest as well as for our competitors both in the U.S. and worldwide.

The enormous size and great diversity of the FUSSR with respect to climate, geography, agricultural technology, crops, animals raised and population density means that investment opportunities and opportunities for trade vary greatly by region. The lack of translated data and the inconsistency of data that is available have presented major problems. This report alleviates some of these problems.

This report is a unique compilation of recent statistics from published FUSSR sources. The authors developed a methodology to estimate the surplus or deficit of the quantity of feed produced for the livestock population by oblast (administrative units). The results are summarized in the report.

This research originated in the late 1980s when the FUSSR under Gorborchov was attempting to initiate major economic reforms. The original intent was to determine the potential size of the market for U.S. soybeans and soybean meal. However, it soon became apparent that

successful agricultural reform would depend not only on correcting the FUSSR's enormous deficit of protein for animal feed but would also require:

1. shifting the cropping patterns that had been locked in place by central planning and local bureaucratic inertia;
2. adoption of modern technologies such as hybrid seed, and on-farm grain drying and storage techniques;
3. modernization of the livestock industry, especially through genetic improvements.

Consequently, the original aim of estimating the size of the FUSSR's demand for imported feedstuffs and their probable sources and transportation routes, was expanded and changed to forecast what a reformed FUSSR agriculture would look like after cropping patterns had changed and improved technology was adopted. We also had pertinent portions of the 1989 Census of the FUSSR translated and developed population data and other pertinent demographic information by oblast. We also developed transportation infrastructure data by mode and rail and highway distances between most trade centers.

However, as we gathered these unique datasets and initiated parts of the research, the rapid disintegration of the FUSSR into independent and/or semi-autonomous republics and regions meant that many of the original goals were not attainable or of lesser importance in the short run.

Consequently, rather than abandon the project in midstream with limited results, we are compiling and publishing these unique statistics by oblast and republic in a systematic "user friendly" form. The attached data disk for this report includes, for each of the oblasts, the area in square miles, the km of railroad, and the km for two types of highways. A distance matrix between the major population centers by road was also generated.

The reported population statistics for each oblast include:

1. The three largest cities and their population.
2. The three largest ethnic groups and their population.
3. A breakdown, by gender, urban or rural, and age cohorts.

The estimated protein surplus/deficiency for the sixty oblasts analyzed are as follows:

15%	extreme shortage
53%	serious shortage
18%	shortage
14%	balanced
0%	surplus

The FUSSR as a whole was estimated to be short the equivalent of 21 million metric tons of soybeans. The estimated livestock needs for caloric (energy) feeds by oblast are as follows:

1%	extreme shortage
36%	serious shortage
29%	shortage
14%	balanced
20%	surplus

Some of the author's opinions, expressed in more detail in the report, include:

1. An animal protein deficiency will always exist in the FUSSR that will require imports of animal feeds.
2. FUSSR can and will become a wheat exporter.
3. Corn can be adopted to the FUSSR (if hybrids, grain bins, market infrastructure and other modernizations occur). A "European Corn Belt" from Spain to Odessa is a real possibility.
4. Many problems of FUSSR agriculture were caused by rigidity in technology and central planning and the adjustment of farmers to protect their self-interest and not due to a lack of resources.

5. Increases in vegetable protein from increased soybean and canola plantings are still uncertain but possible and likely.

6. The FUSSR has been plagued by poor management of their livestock resources that have contributed to the apparent protein shortage.

GUIDE TO AGRICULTURAL RESOURCES AND DEMOGRAPHIC CHARACTERISTICS OF THE FORMER UNION OF SOVIET SOCIALIST REPUBLICS BY OBLAST

The former Soviet Union (FUSSR) was a major contributor to uncertainty and instability in the world grain and oilseed markets. Probable outcomes of the current political turmoil in the FUSSR will eventually be agricultural reforms leading to acreage shifts among wheat, feed grains and oilseeds and improved livestock methods. The results should be a more rational internal trade flow, the development of adequate storage and handling facilities and more responsiveness to the world supply and demand situation in wheat, feed grains and oilseeds. There are important implications for agricultural producers, exports and related service firms and for the shipping and logistic infrastructure of Minnesota and the upper Midwest and for our competitors both in the U.S. and Worldwide.

The enormous size and great diversity of the FUSSR with respect to climate, geography, agricultural technology, crops, animals raised and population density means that investment opportunity and opportunities for trade vary greatly by region. This report is a unique compilation of recent statistics from the published Former Union of Soviet Socialist Republics (FUSSR). The authors developed a methodology to estimate the surplus or deficit of the quantity of feed produced for the livestock population by oblast (administrative units) The estimated protein surplus/deficiency for the sixty oblasts analyzed are as follows:

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SECTION 1

This section reports in detail for sixty areas of the FUSSR the

(a) animal feed protein surplus/deficiency,

(b) calorie (energy) surplus/deficiency, and soybean equivalent to meet the protein requirements.

The qualitative scale range is <<< = extreme shortage, << = serious shortage, < = shortage, > = balanced, >> = surplus. Appendix A contains the feed assumptions used.

	Protein Surplus/ Deficiency	Calorie Surplus/ Deficiency	Soyebean Equivalent (Metric Tons)
USSR	<<	>	21,000,000
*RSFSR			
NORTHWEST			
Leningrad	<<	<<	420,000
Novgorod	<<	<<	102,000
Pskov	<<	<<	170,000
CENTRAL			
Bryansk	<<	<<	240,000
Kalinin	<<<	<<	270,000
Kaluga	<<<	<<	150,000
Moscow	<<<	<<<	790,000
Orlov	<<	<	160,000
Ryazan	<<	<	190,000
Smolensk	<<	<	160,000
Tula	<<	<<	210,000
CENTRAL BLACK SOIL			
Byelgorod	<	>	240,000
Voronezh	<<	<<	350,000
Kursk	<<<	<<	400,000
Lipetsk	>	>>	89,000
Tambov	<<<	<<	400,000
VOLGA VALLEY			
Astrakhan	<<<	<<	130,000
Volgograd	<<	<	350,000
Penza	<<	<<	220,000
Saratov	<<	<	370,000
Kalmyk ASSR	<	<	110,000
NORTH CAUCASAS			
Krasnodar Krai	<<	>>	400,000
Stavropol Kray	<	<	410,000
Rostov	<<	>>	340,000

	Protein Surplus/ Deficiency	Calorie Surplus/ Deficiency	Soyebean Equivalent (Metric Tons)
*UKRAINE			
Voroshilovgrad	<	>>	100,000
Dnepropetrovsk	<<	>	230,000
Donetsk	<	>	170,000
Zaporozhe	<	>>	93,000
Kirovograd	>	>>	60,000
Poltava	<	>	140,000
Sumy	<	>	220,000
Kharkov	<<	<	160,000
Vinitsa	<<	<	210,000
Volyn	<<	<	200,000
Zhitomir	<<	<	300,000
Zakarpatsk	<<	<<	120,000
Ivano-Frankov	<<	<<	110,000
Kiev	<<<	<<	350,000
Lvov	<<<	<<	290,000
Rovno	<<<	<<	220,000
Ternopol	<<	<<	190,000
Khmelinitsa	<<	<<	260,000
Cherkassk	<<	<<	140,000
Chernigov	<<	<	280,000
Chernovtsy	>	>	81,000
Crimea	<<	<<	720,000
Nikolayev	<	<	130,000
Odessa	>	>>	150,000
Kherson	<<	<	260,000
BALTICS			
*Lithuania SSR	<<	<	620,000
*Latvia SSR	<<	<	400,000
*Estonia SSR	<<	<	230,000
*BELORUSSIA			
Brest	>	>>	200,000
Vitebsk	>	>>	180,000
Gomel	<	>	270,000
Grodno	>	>>	160,000
Minsk	<	>>	310,000
Mogilev	>	>>	160,000
*MOLDAVIA SSR	<<	<	380,000

SECTION 2

This section reports quantitative information concerning agricultural production in 1980 and an average of 1985-87 by former Republics.

Information reported includes:

Area Sown - Winter Wheat
Spring Wheat
Rye
Corn for Grain
Barley
Oats
Potatoes
Flax
Sugar Beets
Sunflowers

Output - Winter Wheat
Spring Wheat
Rye
Corn for Grain
Barley
Oats
Eggs
Poultry Meat
Mutton and Goat
Pork
Beef and Veal

AREA SOWN FOR WINTER WHEAT
BY UNION REPUBLIC FOR ALL FARMS, 1,000 Ha

	1980	1985-87 Average
USSR	22,553	16,649
RSFSR	11,107	7,809
UKRAINE SSR	8,000	5,904
BELORUSSIA SSR	118	109
UZBEK SSR	500	364
KAZAK SSR	1,246	1,069
GEORGIA SSR	114	84
AZERBAIJAN SSR	316	271
LITHUANIA SSR	204	244
MOLDAVIA SSR	340	238
LATVIA SSR	83	98
KIRGIZ SSR	243	208
TADZHIK SSR	104	111
ARMENIA SSR	80	64
TURKMEN SSR	55	59
ESTONIA SSR	43	19

AREA SOWN FOR SPRING WHEAT
BY UNION REPUBLIC FOR ALL FARMS, 1,000 Ha

	1980	1985-87 Average
USSR	38,922	31,910
RSFSR	22,893	17,145
UKRAINE SSR	31	14
BELORUSSIA SSR	90	53
UZBEK SSR	22	45
KAZAK SSR	15,848	14,622
GEORGIA SSR	0	1
AZERBAIJAN SSR	2	1
LITHUANIA SSR	2	1
MOLDAVIA SSR	0	1
LATVIA SSR	0	1
KIRGIZ SSR	14	8
TADZHIK SSR	6	9
ARMENIA SSR	2	2
TURKMEN SSR	0	0
ESTONIA SSR	13	9

AREA SOWN FOR WINTER AND SPRING RYE
BY UNION REPUBLIC FOR ALL FARMS, 1,000 Ha

	1980	1985-87 Average
USSR	8,645	9,329
RSFSR	6,135	7,033
UKRAINE SSR	799	617
BELORUSSIA SSR	1,074	958
UZBEK SSR	3	10
KAZAK SSR	261	384
GEORGIA SSR	2	1
AZERBAIJAN SSR	0	1
LITHUANIA SSR	192	165
MOLDAVIA SSR	3	1
LATVIA SSR	111	97
KIRGIZ SSR	1	1
TADZHIK SSR	2	7
ARMENIA SSR	0	1
TURKMEN SSR	0	1
ESTONIA SSR	61	52

AREA SOWN FOR CORN FOR GRAIN
BY UNION REPUBLIC FOR ALL FARMS, 1,000 Ha

	1980	1985-87 Average
USSR	2,977	4,426
RSFSR	590	1,058
UKRAINE SSR	1,498	2,595
BELORUSSIA SSR	0	0
UZBEK SSR	185	121
KAZAK SSR	97	124
GEORGIA SSR	125	113
AZERBAIJAN SSR	8	27
LITHUANIA SSR	0	0
MOLDAVIA SSR	392	265
LATVIA SSR	0	0
KIRGIZ SSR	43	64
TADZHIK SSR	11	17
ARMENIA SSR	0	0
TURKMEN SSR	28	41
ESTONIA SSR	0	0

AREA SOWN FOR WINTER AND SPRING BARLEY
BY UNION REPUBLIC FOR ALL FARMS, 1,000 Ha

	1980	1985-87 Average
USSR	31,583	29,892
RSFSR	18,554	16,307
UKRAINE SSR	3,474	3,756
BELORUSSIA SSR	1,218	973
UZBEK SSR	341	196
KAZAK SSR	6,091	6,808
GEORGIA SSR	51	43
AZERBAIJAN SSR	156	144
LITHUANIA SSR	565	495
MOLDAVIA SSR	65	110
LATVIA SSR	397	402
KIRGIZ SSR	245	248
TADZHIK SSR	51	35
ARMENIA SSR	69	59
TURKMEN SSR	37	47
ESTONIA SSR	269	269

AREA SOWN FOR OATS
BY UNION REPUBLIC FOR ALL FARMS, 1,000 Ha

	1980	1985-87 Average
USSR	11770	12,522
RSFSR	9901	10,811
UKRAINE SSR	707	659
BELORUSSIA SSR	391	389
UZBEK SSR	1	0
KAZAK SSR	493	428
GEORGIA SSR	9	11
AZERBAIJAN SSR	3	3
LITHUANIA SSR	116	97
MOLDAVIA SSR	4	2
LATVIA SSR	82	79
KIRGIZ SSR	6	6
TADZHIK SSR	6	3
ARMENIA SSR	4	3
TURKMEN SSR	0	0
ESTONIA SSR	47	33

AREA SOWN FOR POTATOES 1,000 Ha
BY UNION REPUBLICS
DISTRIBUTED BY ECONOMIC REGIONS AT YEAR`S END

	1980	1985-87 Average
USSR	6,936.0	6,348.0
RSFSR	3,789	3,485
UKRAINE SSR	1,682	1,509
BELORUSSIA SSR	787	696
UZBEK SSR	23	29
KAZAKH SSR	191	191
GEORGIA SSR	34	31
AZERBAIJAN SSR	20	24
LITHUANIA SSR	139	132
MOLDAVIA SSR	40	43
LATVIA SSR	106	92
KIRGIZ SSR	22	21
TADZHIK SSR	9	11
ARMENIA SSR	20	20
TURKMEN SSR	2	3
ESTONIA SSR	72	60

AREA SOWN FOR FLAX 1,000 Ha
BY UNION REPUBLICS
DISTRIBUTED BY ECONOMIC REGIONS AT YEAR`S END

	1980	1985-87 Average
USSR	1,116.0	986.7
RSFSR	595	528
UKRAINE SSR	226	207
BELORUSSIA SSR	234	201
UZBEK SSR	0	0
KAZAKH SSR	0	0
GEORGIA SSR	0	0
AZERBAIJAN SSR	0	0
LITHUANIA SSR	38	33
MOLDAVIA SSR	0	0
LATVIA SSR	18	14
KIRGIZ SSR	0	0
TADZHIK SSR	0	0
ARMENIA SSR	0	0
TURKMEN SSR	0	0
ESTONIA SSR	5	4

AREA SOWN FOR SUGAR BEETS 1,000 Ha
BY UNION REPUBLICS
DISTRIBUTED BY ECONOMIC REGIONS AT YEAR`S END

	1,980	1985-87 Average
USSR	3,710	3,405
RSFSR	1,615	1,486
UKRAINE SSR	1,775	1,653
BELORUSSIA SSR	52	55
UZBEK SSR	0	0
KAZAKH SSR	78	63
GEORGIA SSR	3	1
AZERBAIJAN SSR	0	0
LITHUANIA SSR	36	35
MOLDAVIA SSR	106	94
LATVIA SSR	13	14
KIRGIZ SSR	28	0
TADZHIK SSR	0	0
ARMENIA SSR	4	4
TURKMEN SSR	0	0
ESTONIA SSR	0	0

AREA SOWN FOR SUNFLOWERS 1,000 Ha
BY UNION REPUBLICS
DISTRIBUTED BY ECONOMIC REGIONS AT YEAR`S END

	1980	1985-87 Average
USSR	4,353	4,019
RSFSR	2,380	2,270
UKRAINE SSR	1,683	1,505
BELORUSSIA SSR		0
UZBEK SSR		0
KAZAKH SSR	103	101
GEORGIA SSR	13	11
AZERBAIJAN SSR		0
LITHUANIA SSR		0
MOLDAVIA SSR	170	130
LATVIA SSR		0
KIRGIZ SSR		0
TADZHIK SSR		0
ARMENIA SSR		0
TURKMEN SSR		0
ESTONIA SSR		0

WINTER WHEAT OUTPUT
BY UNION REPUBLIC FOR ALL FARMS, 1,000 TONS

	1980	1985-87 Average
USSR	49,816	43,893
RSFSR	22,851	18,832
UKRAINE SSR	21,278	18,951
BELORUSSIA SSR	236	342
UZBEK SSR	417	364
KAZAK SSR	1,434	1,617
GEORGIA SSR	219	201
AZERBAIJAN SSR	778	699
LITHUANIA SSR	405	774
MOLDAVIA SSR	1,017	770
LATVIA SSR	166	304
KIRGIZ SSR	572	600
TADZHIK SSR	102	133
ARMENIA SSR	146	150
TURKMEN SSR	72	100
ESTONIA SSR	123	55

SPRING WHEAT OUTPUT
BY UNION REPUBLIC FOR ALL FARMS, 1,000 TON

	1980	1985-87 Average
USSR	48,366	40,672
RSFSR	30,901	25,315
UKRAINE SSR	53	38
BELORUSSIA SSR	148	130
UZBEK SSR	17	30
KAZAK SSR	17,179	15,092
GEORGIA SSR	1	1
AZERBAIJAN SSR	2	1
LITHUANIA SSR	0	3
MOLDAVIA SSR	0	0
LATVIA SSR	0	2
KIRGIZ SSR	22	19
TADZHIK SSR	4	10
ARMENIA SSR	2	3
TURKMEN SSR	1	0
ESTONIA SSR	37	27

WINTER AND SPRING RYE OUTPUT
BY UNION REPUBLIC FOR ALL FARMS, 1,000 TON

	1980	1985-87 Average
USSR	10,210	16,372
RSFSR	6,424	11,511
UKRAINE SSR	1,138	1,220
BELORUSSIA SSR	1,846	2,503
UZBEK SSR	5	12
KAZAK SSR	129	301
GEORGIA SSR	2	2
AZERBAIJAN SSR	0	1
LITHUANIA SSR	328	411
MOLDAVIA SSR	5	1
LATVIA SSR	167	252
KIRGIZ SSR	1	3
TADZHIK SSR	1	6
ARMENIA SSR	0	1
TURKMEN SSR	0	0
ESTONIA SSR	164	147

CORN FOR GRAIN OUTPUT
BY UNION REPUBLIC FOR ALL FARMS, 1,000 Ha

	1980	1985-87 Average
USSR	9,454	13,898
RSFSR	1,448	2,851
UKRAINE SSR	4,070	8,182
BELORUSSIA SSR	0	0
UZBEK SSR	1,240	418
KAZAK SSR	414	526
GEORGIA SSR	306	312
AZERBAIJAN SSR	29	68
LITHUANIA SSR	0	0
MOLDAVIA SSR	1,549	922
LATVIA SSR	0	0
KIRGIZ SSR	216	424
TADZHIK SSR	62	86
ARMENIA SSR	1	1
TURKMEN SSR	119	108
ESTONIA SSR	0	0

WINTER AND SPRING BARLEY OUTPUT
BY UNION REPUBLIC FOR ALL FARMS, 1,000 Ha

	1980	1985-87 Average
USSR	43,450	52,946
RSFSR	24,030	27,180
UKRAINE SSR	7,236	10,421
BELORUSSIA SSR	2,053	14,920
UZBEK SSR	309	219
KAZAK SSR	6,405	7,115
GEORGIA SSR	92	104
AZERBAIJAN SSR	314	375
LITHUANIA SSR	915	1,392
MOLDAVIA SSR	162	300
LATVIA SSR	568	1,010
KIRGIZ SSR	482	604
TADZHIK SSR	38	37
ARMENIA SSR	82	129
TURKMEN SSR	50	78
ESTONIA SSR	714	762

OAT OUTPUT
BY UNION REPUBLIC FOR ALL FARMS, 1,000 Ha

	1980	1985-87 Average
USSR	15,544	20,312
RSFSR	12,619	16,612
UKRAINE SSR	1,178	1,550
BELORUSSIA SSR	592	1,024
UZBEK SSR	1	1
KAZAK SSR	691	572
GEORGIA SSR	7	14
AZERBAIJAN SSR	4	5
LITHUANIA SSR	168	243
MOLDAVIA SSR	9	5
LATVIA SSR	128	183
KIRGIZ SSR	12	16
TADZHIK SSR	3	2
ARMENIA SSR	2	4
TURKMEN SSR	0	0
ESTONIA SSR	130	81

EGG PRODUCTION IN MILLION EGGS
BY UNION REPUBLICS
DISTRIBUTED BY ECONOMIC REGIONS AT YEAR`S END

	1980	1985-87 Average
USSR	67,943	80,246
RSFSR	39,539	45,973
UKRAINE SSR	14,606	17,122
BELORUSSIA SSR	3,034	3,421
UZBEK SSR	1,461	2,069
KAZAKH SSR	3,369	4,030
GEORGIA SSR	655	863
AZERBAIDZHAN SSR	721	1,001
LITHUANIA SSR	959	1,201
MOLDAVIA SSR	874	1,103
LATVIA SSR	730	908
KIRGIZ SSR	416	572
TADZHIK SSR	322	534
ARMENIA SSR	467	606
TURKMEN SSR	248	298
ESTONIA SSR	542	543

POULTRY MEAT IN 1,000 TONNES
BY UNION REPUBLICS
DISTRIBUTED BY ECONOMIC REGIONS AT YEAR`S END

	1980	1985-87 Average
USSR	2,139	2,977 0
RSFSR	1,134	1,625
UKRAINE SSR	522	658
BELORUSSIA SSR	87	127
UZBEK SSR	27	48
KAZAK SSR	126	185
GEORGIA SSR	23	38
AZERBAIJAN SSR	36	55
LITHUANIA SSR	40	45
MOLDAVIA SSR	44	58
LATVIA SSR	32	41
KIRGIZ SSR	15	26
TADZHIK SSR	13	15
ARMENIA SSR	21	28
TURKMEN SSR	6	7
ESTONIA SSR	13	20

MUTTON AND GOAT MEAT IN 1,000 TONS
BY UNION REPUBLICS
DISTRIBUTED BY ECONOMIC REGIONS AT YEAR`S END

	1980	1985-87 Average
USSR	849	875
		0
RSFSR	338	338
UKRAINE SSR	29	38
BELORUSSIA SSR	4	8
UZBEK SSR	61	58
KAZAK SSR	231	244
GEORGIA SSR	10	9
AZERBAIJAN SSR	30	31
LITHUANIA SSR	2	4
MOLDAVIA SSR	4	5
LATVIA SSR	4	4
KIRGIZ SSR	61	64
TADZHIK SSR	25	25
ARMENIA SSR	17	14
TURKMEN SSR	29	30
ESTONIA SSR	4	4

PORK MEAT IN 1,000 TONS
BY UNION REPUBLICS
DISTRIBUTED BY ECONOMIC REGIONS AT YEAR`S END

	1980	1985-87 Average
USSR	5,183	6,081
RSFSR	2,579	3,126
UKRAINE SSR	1,315	1,456
BELORUSSIA SSR	350	425
UZBEK SSR	27	41
KAZAK SSR	195	216
GEORGIA SSR	64	70
AZERBAIJAN SSR	11	12
LITHUANIA SSR	205	237
MOLDAVIA SSR	139	154
LATVIA SSR	132	155
KIRGIZ SSR	25	28
TADZHIK SSR	8	13
ARMENIA SSR	20	24
TURKMEN SSR	7	9
ESTONIA SSR	106	117

BEEF AND VEAL MEAT IN 1,000 TONS
BY UNION REPUBLICS
DISTRIBUTED BY ECONOMIC REGIONS AT YEAR`S END

	1980	1985-87 Average
USSR	6,645	7,833
RSFSR	3,274	3,778
UKRAINE SSR	1,556	1,867
BELORUSSIA SSR	411	504
UZBEK SSR	213	241
KAZAK SSR	465	572
GEORGIA SSR	45	54
AZERBAIJAN SSR	62	78
LITHUANIA SSR	174	229
MOLDAVIA SSR	86	100
LATVIA SSR	114	131
KIRGIZ SSR	51	62
TADZHIK SSR	47	55
ARMENIA SSR	38	44
TURKMEN SSR	36	41
ESTONIA SSR	73	77

SECTION 3

This is a computer disk with oblast data in both Quattro Pro (WQ1) and Lotus formats (WK1). The disk contains nine files.

The first two files - **land_ag** (both WQ1 and WK1) contains:

Land Area, Area Sown, and Area Sown to Grain.

1985-87 average production for Wheat, Barley, Oats, Corn for Grain, Rye, Sunflowers, Sugar Beets, Potatoes, Fodder, Silage, Alfalfa, Hay, and Pasture.

The second set of files - **ld_trans** and contains:

1980 and 1985-87 average for head of Beef, Cows, Poultry, Pigs, Sheep and Goats, 1985-87 average Beef and Veal, Milk, Poultry, Pork, Mutton and Goat, Eggs, and all Meat.

Km of railroad, and roads.

The third set of files - **people** and contains:

Three largest Cities and Population, Three largest Ethnic Groups and Population, Gender, Urban Rural, and Age Cohorts.

The fourth set of files - **distmx** and contains:

A distance matrix between a number of oblast capitals or centroids. Names were truncated to six letters by the software used to generate the matrix.

The last file is **USSR_obl.abf** and contains an ATLAS*GRAPHICS boundary file in version 3.0.

RESEARCH OBSERVATIONS AND CONCLUSIONS

1. Pre World War I Russia was a major world wheat exporter and furnished much of Europe's wheat. Russia and some of the other republics, e.g., Kazakistan, have the soil and resources and the comparative advantage to again become major what exporters on the world market.

2. Because of the FUSSR land mass, latitude and climate, there will always be an animal feed protein deficit under today's western technology. This is especially true for Russia proper with its norther latitude and relatively large population. Some more favorably located republics such as the Ukraine will be able to export limited amounts of protein feeds. In fact, some oblasts in the Ukraine currently produce more protein then is needed locally.

3. There will be increases in acreage of newer (for western FUSSR) protein crops such as soybeans and canola. The long-term impact of expanding canola production in place of small grains in Belorus, Russia and the Baltics may substantially reduce their protein deficits (and reduce potential wheat exports).

4. In recent years, the FUSSR has planted more hectares of corn than any other country except for the U.S. and China, with the vast majority of the plantings in the Ukraine. However, the FUSSR ranked 6th or 7th in terms of corn harvested for grain. Most of the crop was harvested as silage or forage. Much of this corn acreage could be harvested for grain in a typical year if the U.S. or farm grain drying and storage equipment and methods were used. Growing corn for grain is also hampered because there is no marketing infrastructure in place to buy, handle, and ship farm grown corn to out-of-area feedlots.

Much more corn could be harvested for grain when modern hybrids with genetics matching climate requirements become available to FUSSR farmers.

5. Grain (corn, wheat, etc., as opposed to fodder, straw and silage) production has been hampered by long-standing government practices in the FUSSR. Grain is valuable in national and international commerce and can be removed from farms and transported long distances at the government's orders. Fodder, hay and straw can not be transported easily but has a value almost equal to grain as animal feed. To keep control and benefit of the crop, the astute feudal peasant and the modern farmer frequently concentrated on producing fodder rather than grain. This is done by such methods as heavily overseeding wheat to get straw at the expense of grain and harvesting fodder and silage rather than corn for grain. Consequently, the development of a viable market infrastructure and the demise of the central planning bureaucracy that systematically underpaid for grain will change incentives and result in increased grain production.

6. There will be substantial shifts in acreage between crops and regions as markets develop. Agricultural trade between and within republics will allow regions to specialize in crops in which they have comparative advantages. These shifts will influence European agriculture beyond the borders of the FUSSR. One outcome will be increased wheat production in the FUSSR in the areas with an historic comparative advantage for wheat. Production of oilseeds (and protein meal byproducts) will increase. Finally, we anticipate the development of a "European Corn Belt" stretching from Spain to the Black Sea with total corn for grain production equaling 50% or more of U.S. corn production.

7. Part of the apparent protein feed deficiency is the result of poor (from our viewpoint) livestock management practices. Poor ventilation and climate control, inability to obtain ingredients for proper rations and obsolete genetics impact feed utilization. Correction

or improvements will reduce the animal population and consequently the total feed requirement.

8. FUSSR agricultural production has been hampered by a lack of spare parts, hardware stores and Sears Roebuck catalogs. The Central planning system did not develop or encourage the type of essential but decentralized infrastructure that is necessary for maintenance and innovation in modern agriculture as we know it in the United States.

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